



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent XWB-97
 UNIQUE ID NUMBER: 18RR080
 COMBUSTOR: Phase5 Tiled
 ENGINE TYPE: TF

BYPASS RATIO: 8.0
 PRESSURE RATIO (π_{00}): 48.6
 RATED THRUST (F_{00}) (kN): 436.7

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F ₀₀ (g/kN) or SN	1.6	28.4	75.5	14.3
AS % OF ORIGINAL LIMIT	8.1	24.1	55.1	90.7
AS % OF CAEP/2 LIMIT (NO _x)			68.8	
AS % OF CAEP/4 LIMIT (NO _x)			72.5	
AS % OF CAEP/6 LIMIT (NO _x)			78.6	
AS % OF CAEP/8 LIMIT (NO _x)			86.5	

DATA STATUS

- PRE-REGULATION
 x CERTIFICATION
 - REVISED (SEE REMARKS)

TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES
 x DEDICATED ENGINES TO PRODUCTION STANDARD
 - OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE
 (ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)
 x OUT OF PRODUCTION (DATE: 31/07/2020)
 - OUT OF SERVICE (DATE: -)

MEASURED DATA

MODE	POWER SETTING (%F ₀₀)	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO _x	
TAKE-OFF	100	0.7	3.507	0.00	0.50	56.91	10.7
CLIMB OUT	85	2.2	2.805	0.00	0.67	40.17	8.7
APPROACH	30	4.0	0.907	0.00	0.53	12.69	6.3
IDLE	7	26.0	0.325	0.89	19.09	4.81	1.3
LTO TOTAL FUEL (kg) or EMISSIONS (g)			1242	451	10117	28456	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D _p /F ₀₀ (g/kN) or AVERAGE SN (MAX)				1.0	23.2	65.2	11.1
SIGMA (D _p /F ₀₀ in g/kN, or SN)				0.1	0.5	0.2	0.3
RANGE (D _p /F ₀₀ in g/kN, or SN)				0.97-1.09	22.72-23.67	65.03-65.34	10.8-11.4

ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	99.6-101.5
TEMPERATURE (K)	277.8-284.9
ABS HUMIDITY (kg/kg)	0.00258-0.00494

FUEL

SPEC	
H/C	1.91
AROM (%)	17.65

MANUFACTURER: Rolls-Royce plc
 TEST ORGANIZATION: Rolls-Royce
 TEST LOCATION: Derby
 TEST DATES: 15/04/2016-18/04/2016

NO_x REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
x	2.3.2 e) (CAEP/8)

REMARKS

- Data from Certification Report EDNS01000420230 Iss 1
- Certification in accordance with Part III, Chapter 2, of Amendment 8 of ICAO Annex 16 Vol. II.
- NO_x levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

Compliance with Fuel Venting requirements: x ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)